

Chapter 2

The System Software

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The System Software

The InstantImager software runs within the Microsoft Windows® 3.1 or Windows® 95 environment. Windows provides the interface between you and what you see on the screen. The InstantImager software is an application program that runs within Windows and is used to control the instrument.

Windows allows you to perform such rudimentary tasks as moving windows, shrinking windows, enlarging windows and closing windows. The InstantImager software provides the programs that enable you to perform the specific tasks of collecting and analyzing images.

About Windows

Windows is a graphical user interface, or GUI. Windows gives you an easy-to-use pictorial means of controlling the resources of your computer.

Everything you need to have your computer do can be done through Windows or an application program that runs in the Windows environment.



Note: The Windows information presented here is by no means complete. See the Microsoft Windows User's Guide for more details about menus, Program Manager, File Manager, and Windows Accessories.

The discussion that follows describes the Windows 3.1 environment. Windows 95 has many similarities to this previous Windows version and is not separately discussed in this manual. Refer to the documentation supplied with Windows 95 for specific instructions related to that operating system.

Components of a Window

The window components shown in Figure 2-1 are the standard tools you can use when you work with each window and the application or document within each window. All components are included in each window; although not all windows will use each component.

Each application that you work with opens as an individual window. Some documents that you work with also open as individual windows.

Each window component is discussed below.

1. The **control-menu box** is located in the upper-left corner of each window. Using Control-menu commands, you can maximize, minimize, move, resize, and close windows.
Using a mouse, you can bypass the Control-menu box and move, resize, minimize, maximize, and close windows by simply clicking and dragging.
2. The **title bar** displays the application name or document name. If more than one window is open at a time, the title bar for the active window is of a greater intensity than the title bars in inactive windows.
An active window is one that is currently in use. The title bar of an active window is of a different color or intensity than title bars in inactive windows; active windows have title bars that are highlighted, while inactive windows have title bars that are dimmed.
3. The **window title** can be the name of the application and the name of the document, It could also be the name of a group, directory, or file.
4. The **menu bar** lists the names of all accessible menus. Most applications have a File menu, an Edit menu, and a Help menu.
5. **Scroll bars** let you shift parts of a document into view when the entire document can't be seen in the window. They also let you look at portions of lists that are hidden from view because they are too long.

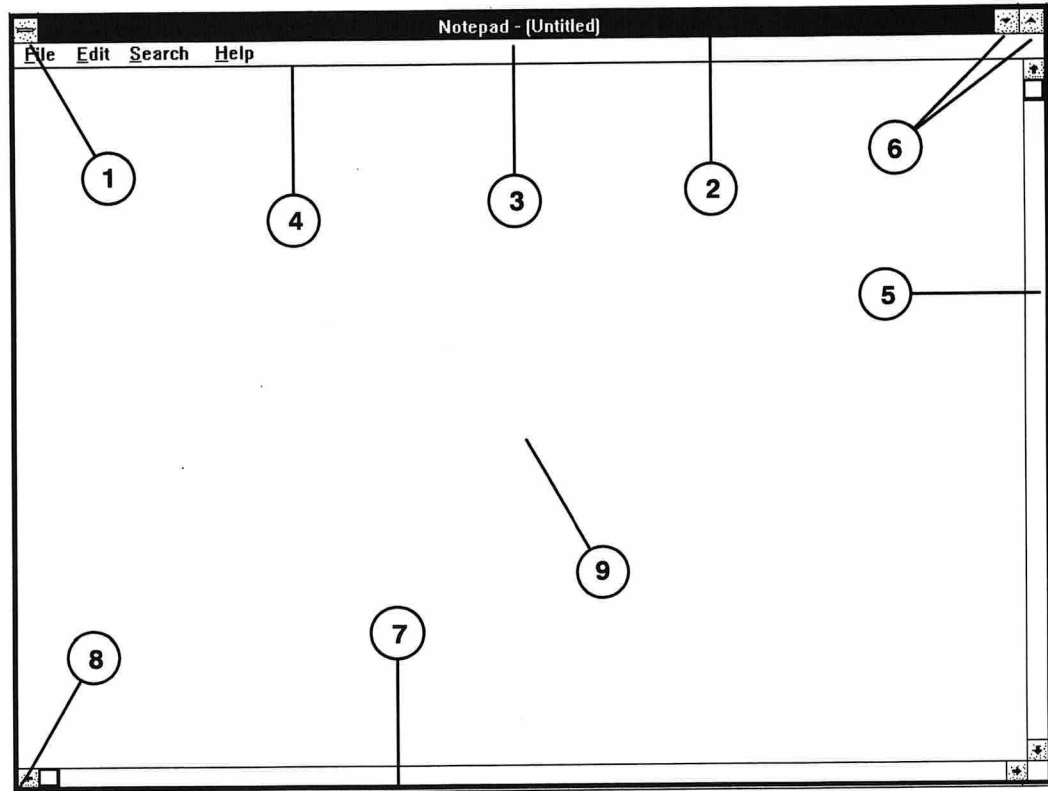


Figure 2-1. Window Components.

6. The **Maximize** and **Minimize buttons** expand the current application window to fill the entire desktop or contract the window to an icon.
Document windows expand to fill the workspace, not the entire desktop. After you expand a window, the Maximize button is changed to a Restore button; you can use the Restore button to return the expanded window to its former size.
7. The **window border** is the outermost edge of the window. You can adjust the length of each side of a border.
8. The **window corner** can be used to adjust the length of two sides of a border at the same time.
9. The **workspace** is where you work with an application. For example, when you work with a word processor, the text of the document appears in the workspace.

The arrow-shaped **mouse pointer** can be used to select items in the workspace.

Working with the Mouse

You can use the mouse to select and drag items in a window, size a window, and change the dimensions of a window.

This section discusses some of the basic operations you can perform with a mouse.

Moving the Mouse on a Work Surface

Move the mouse by sliding it on the surface of your desk or workstation. The mouse pointer (the arrow on the screen) tracks the motion of the mouse.

The position of the mouse pointer on the screen is not related to the absolute position of the mouse on the work surface. Therefore, if you suddenly run out of space, you can pick up the mouse and move it to another location on the work surface.

The Mouse Buttons (clicking, double clicking, dragging)

The mouse has two buttons, left and right. You can use the right mouse button to: 1) Demagnify the image with the Magnifying Glass tool, and 2) Copy objects on the image.

The left button is used for most Windows functions. You can use the left-most button to perform the following operations: 1) Clicking, 2) Double Clicking, and 3) Dragging.

Before you perform one of the operations, you must first point the mouse pointer to an item in the current window.

- **Clicking the Mouse Button**

To click the mouse button means to quickly press the left mouse button just once. For example, to select a menu, point the mouse pointer to the menu name and then quickly press the left mouse button once.

- **Double Clicking the Mouse Button**

To double click the mouse button means to quickly press the left mouse button twice. For example, to maximize an icon, point the mouse pointer to an icon, and then quickly press the left mouse button twice.

- **Dragging**

The dragging operation is used to move things about on the screen. For example, you can drag an icon from one location on the screen to another.

To drag an icon, position the mouse pointer until it touches the icon. Press the left mouse button and continue to hold it down as you move the mouse and drag the icon to its new location in the window. Release the mouse button after you have moved the icon to its new location. The characteristics of the icon will change as you drag it.

Moving the Display Window

The dragging operation can be used to move the display options around the screen. The display options are displayed in the **Display** window in the **InstantImager** window. The display options can be moved to any position within the borders of the **InstantImager** window.

To help you see all of the image on the screen, you should move the **Display** window to the right side of the screen, not covering the vertical slide bar. If you put the window on the left, it would cover the tool box.

To move the **Display** window, use the following steps:

- ☐ Move the mouse pointer to the window's title bar (Figure 2-2).
- ☐ Click and hold the left mouse button.
- ☐ Drag the window to its new location and release the mouse button.

The window is moved to its new location (Figure 2-3).

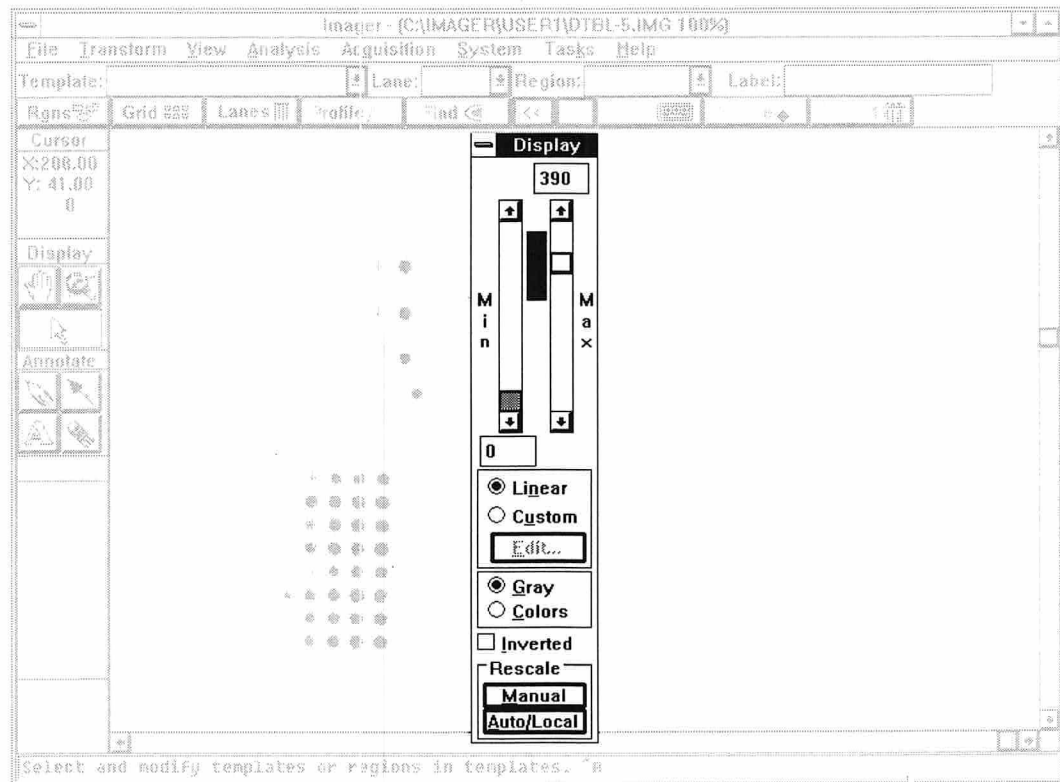


Figure 2-2. Display Options Before Move.

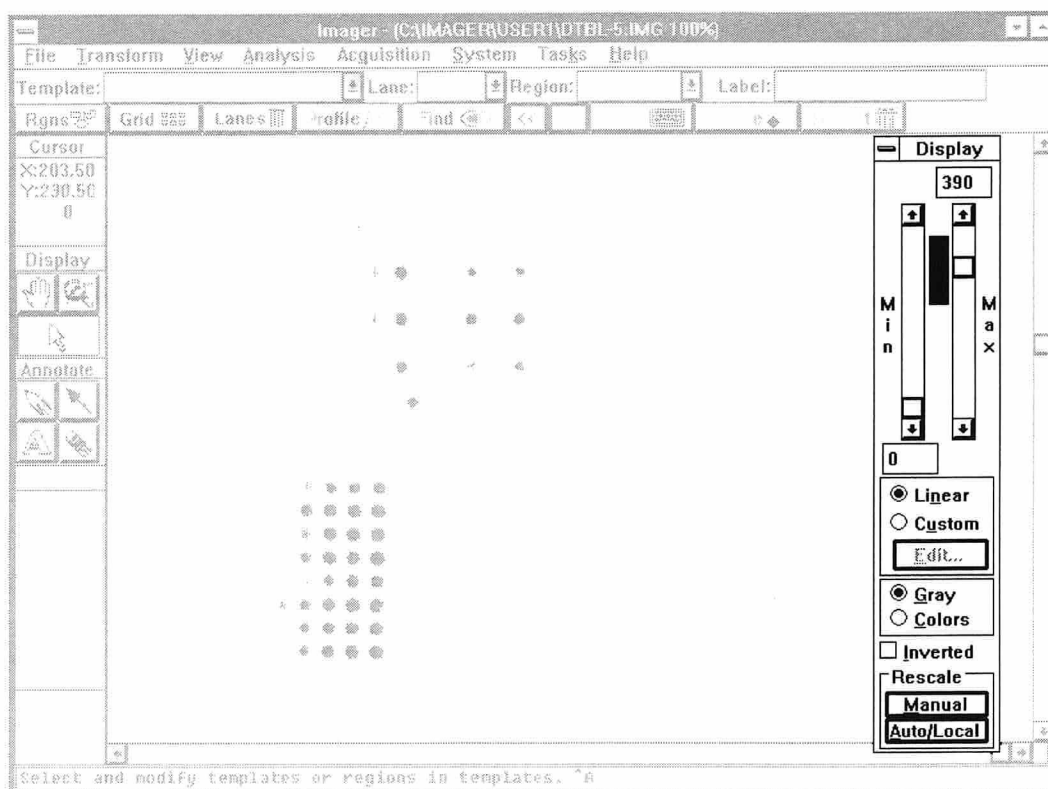


Figure 2-3. Display Options After Move.

The InstantImager Software

The InstantImager software is an application that you can run in Windows. The instrument software is a menu driven application and is composed of several menus. Each menu offers a variety of selections and commands.

All of the commands that you use to acquire, view, edit, and analyze a sample image can be selected from the menus in the **InstantImager** window (Figure 2-4). The **InstantImager** window is displayed when you start the InstantImager application from the Start Menu or Program Manager.

Callouts for Figure 2-4

1. Templates for analysis can be overlaid on images. Templates can be deleted or hidden from view.
2. Annotations can be made on images that are displayed on the screen. You can draw lines, draw freehand, add text, or point to features with arrows.
3. The image location of the mouse pointer is displayed in the cursor box. The current X and Y coordinates of the mouse pointer are dynamically reported as you move the mouse. The counts in each pixel are also reported. When a lane template is selected, the distance from the sample origin is displayed.

4. The tool box is always displayed on the side. It is divided into areas for display and annotation. Each area contains selectable icons.

The Display area contains the Pointer icon, the Magnifying Glass icon, and the Hand icon. Use the Pointer tool to select and edit objects on the image; use the Magnifying Glass tool to magnify (zoom) and demagnify the image; use the Hand tool to move the magnified image around the screen.

The Annotation area contains the Pencil icon, Arrow icon, Text Tool icon, and Eraser icon.

The Pencil tool enables you to draw line segments and arbitrary traces. The Arrow tool enables you to draw arrows that point to specific items of interest on the image. The Text tool enables you to write comments upon the image. The Eraser tool enables you to erase annotations.

5. The template bar contains a row of drop-down menus and a row of command buttons.

Drop-down menus:

Template Menu: Displays the name of the template that is currently highlighted. Selecting the drop-down arrow displays a list of templates; select a template from the list.

Lane Menu: When a lane template is selected, displays the name of the lane that is currently highlighted. Selecting the drop-down arrow displays a list of lanes; select a lane from the list.

Region Menu: When a region group or lane template is selected, displays the name of the region that is currently highlighted. Selecting the drop-down arrow displays a list of regions; select a region from the list.

Label Box: Enables you to assign a name to the highlighted lane or region; useful for reporting purposes.

Command Buttons:

Rgns: Creates a group of regions template.

Grid: Creates a grid template.

Lane: Creates a lane template.

Profile: Profiles a lane. Grayed out if a lane template is not selected.

Find: Finds regions of activity. Grayed out if a group of regions template is not selected.

<< Previous: Moves the focus to the previously listed region, template, or annotation.

>> Next: Moves the focus to the next listed region, template, or annotation.

Edit: Edit a template numerically. Grayed out if no template is selected.

Delete: Delete a template or region. Grayed out if no template is selected.

Report: Report results from a template. Grayed out if no template is selected.

6. The help line displays information about areas of the screen and functions you are performing.

When an image is acquiring, the following information about the acquisition will be displayed: Time Remaining and The CPM of the sample.

Time Remaining: The time remaining until the next screen update will be counted down. If the time remaining is greater than 1 minute, the time will be expressed in minutes. If the time remaining is less than 1 minute, the time will be expressed in seconds.

The CPM of the Sample: The CPM of the entire sample is displayed. If any pixel is overflowed, the CPM will no longer be displayed; rather, a message stating that a pixel has saturated will be displayed.

7. The **Display** window enables you to control the display by fine tuning specific features of the image. You can position the **Display** window anywhere on the screen. It is recommended that you position it at the edge of the screen (right side), so that it does not interfere with the display of the image.

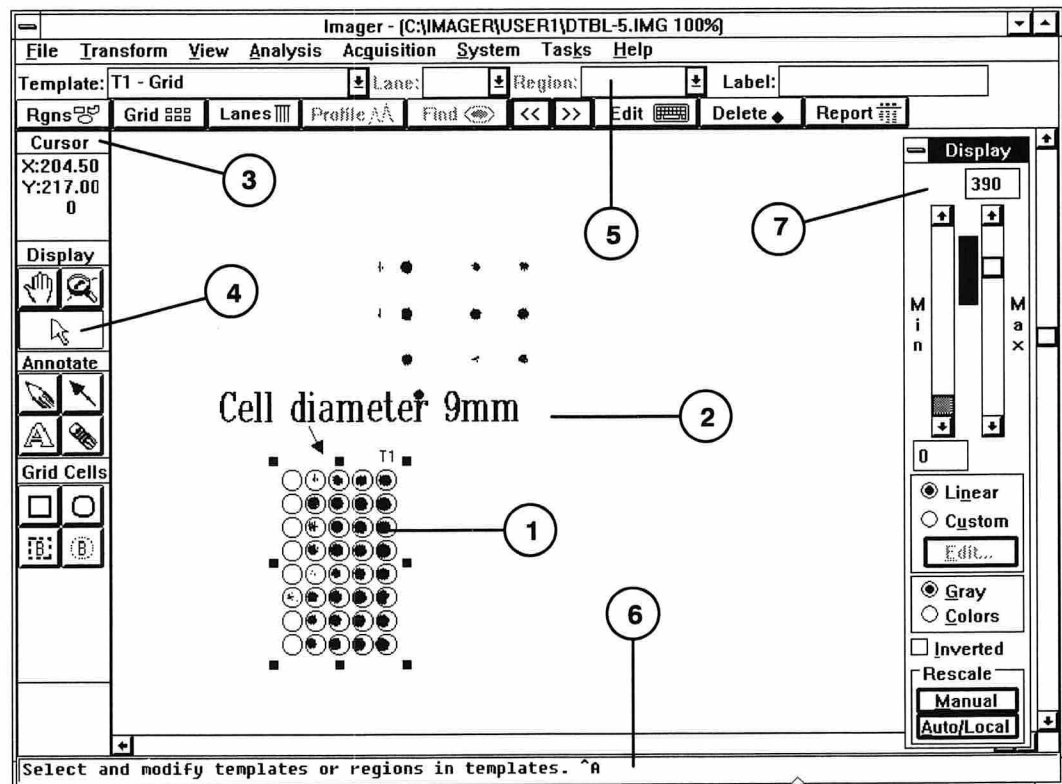


Figure 2-4. InstantImager Window.

Menus and Selections

This section describes the menus that can be selected from the **InstantImager** window. Pictures of the menus follow with brief descriptions of each selection.

When you place the mouse pointer on a menu item and press the left mouse button, a menu drops down. The name of each selection is displayed in each pull down menu.

File Menu

The **File** menu is shown in Figure 2-5. This menu is displayed by selecting **File** the menu bar. The **File** menu contains commands that are commonly found in Windows applications.

Each selection at the **File** menu is discussed below:

- | | |
|---------------|--|
| Open: | Enables you to select the filename of the image you want to open. A list of image files (.img) will appear for the specified drive and path. Annotations and analysis templates will be loaded and displayed along with image files if they have been created. |
| Close: | Enables you to close the image that is currently displayed. |
| Save: | Enables you to save the current image to the directory and filename associated with the image. Image display parameters and any templates and/or annotations are saved along with the image. |

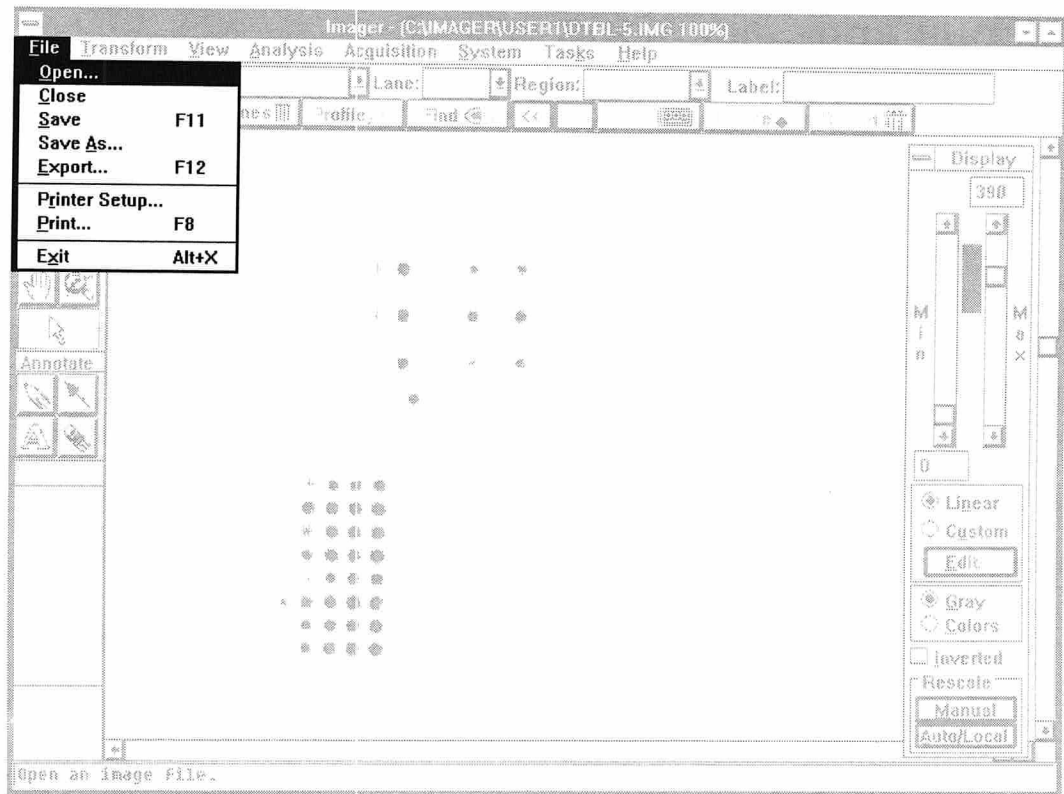


Figure 2-5. File Menu.

Save As:	Enables you to save an image to a new filename. You must specify the directory path and the filename associated with the image. As with the save command, any image display parameters, templates, and annotations are saved along with the image.
Export:	Enables you to copy all or part of an entire image as it currently appears on the screen to another program. For example, you can export an image for analysis or publication.
Printer Setup:	Enables you to specify the type of printer your system uses. Once the printer is specified, you can configure the printer to run with your computer.
Print:	Prints the image that is currently displayed. Annotations or templates will be printed with the image if they are shown on the screen. Before the image is printed, you can specify its orientation (portrait or landscape), whether you want to print the entire image, or a specified portion and magnification.
Exit:	Closes the current InstantImager application.

Transform Menu

The **Transform** menu is shown in Figure 2-6. This menu is displayed by selecting **Transform** in the menu bar. The **Transform** menu contains commands that enable you to change the orientation of the image on the screen.

Each selection at the **Transform** menu is discussed below:

Rotate 90:	Turns the image on the screen 90 degrees counterclockwise.
Rotate 180:	Turns the image on the screen 180 degrees counterclockwise.
Rotate 270:	Turns the image on the screen 270 degrees counterclockwise.
Flip Top to Bottom:	Reflects the image, moving the top to the bottom.
Flip Left to Right:	Reflects the image, moving the left side to the right.
Crop Image:	Enables you to crop out the image so as to only display the area of the image you are interested in.
High Resolution:	Converts the image to either a high resolution display or returns the image to normal display. A checkmark (✓) appears next to this selection when the image is in high resolution mode.

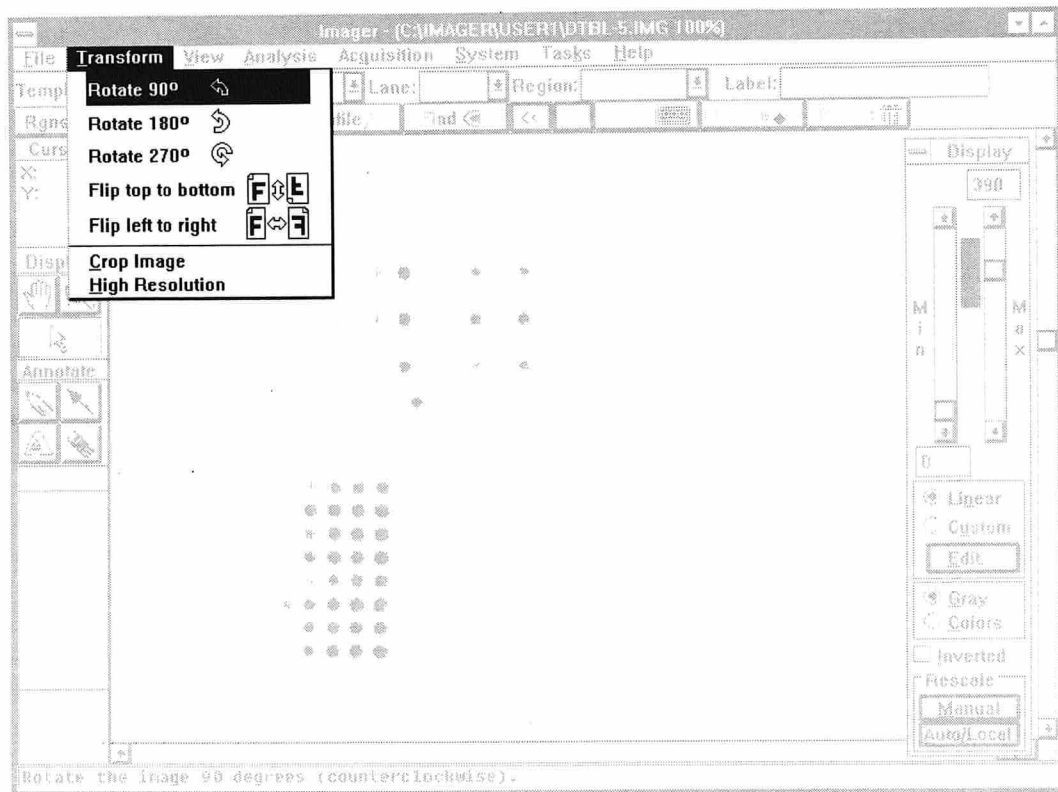


Figure 2-6. Transform Menu.

View Menu

The **View** menu (Figure 2-7) is displayed by selecting **View** in the menu bar. It contains commands that enable you to hide or display specific aspects of the **InstantImager** window such as annotations, the template bar, or the help line.

Each selection at the **View** menu is discussed below:

- | | |
|----------------------------------|--|
| Hide/Show Template: | Hides or displays the template that is overlaid on the image. Templates are grids, lanes, and related annotations that define regions of the image for analysis. Templates can be created through the Analysis menu. |
| Hide/Show Annotations: | Hides or displays any annotations that are written or overlaid on the image. Annotations can be created through the tool box. |
| Hide/Show Profile Window: | Hides or displays the Show Profile window. This selection is grayed (inactive) unless a lane template exists on the image. |
| Hide/Show Toolbox: | Hides or displays the tool box located on the side of the screen. |
| Hide/Show Template Bar: | Hides or displays the template bar. The template bar contains a row of buttons. Each button represents a command. The template bar also lists any analysis templates and their lanes or regions. |
| Hide/Show Helpline: | Hides or displays the helpline at the bottom of the screen. The helpline displays information about areas of the screen and functions you are performing. |

Hide/Show Display Options: Hides or displays the **Display** window. The display options enable you to fine tune specific features of the image. You can position the **Display** window anywhere on the screen. It is recommended that you position it at the edge of the screen (right side), so that it does not interfere with the image.

Image Info: Displays the **Image Information** window. This window displays information about the image that is currently displayed.

Smooth: Displays the **Smooth Parameters** window. From this window, you can choose one of four levels of smoothing for the image currently displayed: 1) None, 2) Light, 3) Medium, 4) Heavy.

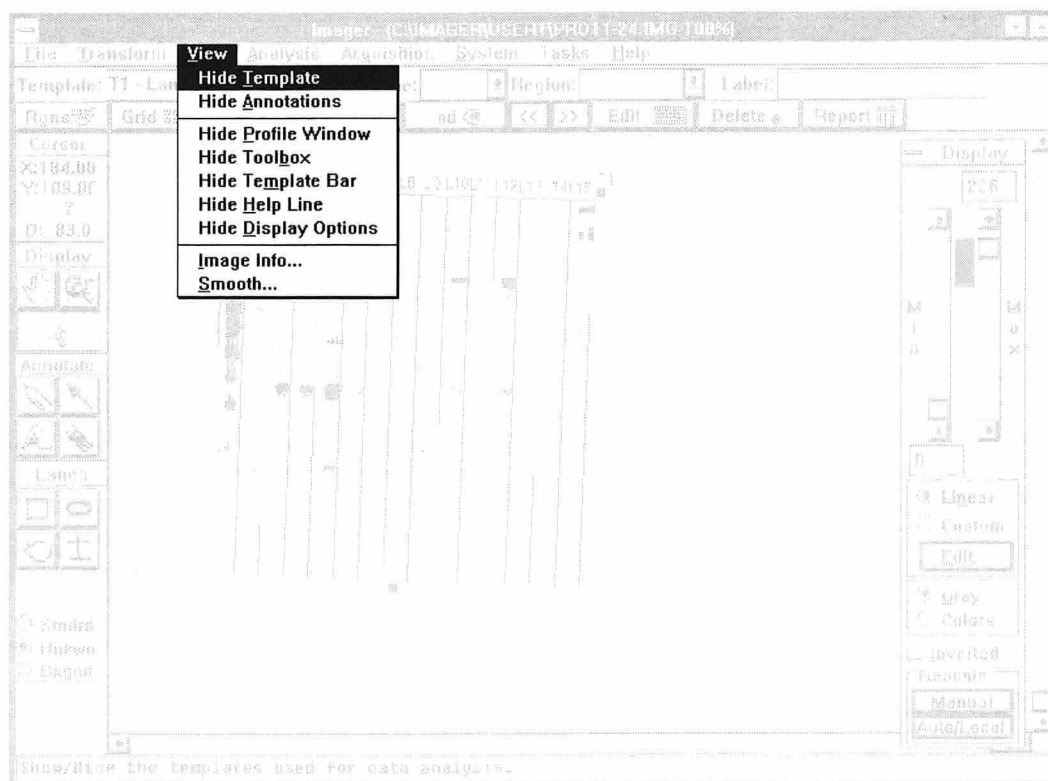


Figure 2-7. View Menu.

Analysis Menu

The **Analysis** menu is shown in Figure 2-8 and is displayed by selecting **Analysis** at the menu bar. This menu contains commands that enable you to map the sample image for analysis; templates are used to analyze the current image.

Templates include: 1) Grids, 2) Lane Groups, and 3) Region Groups. Templates can be saved with the image. You can create templates and save them for use with other images.

Each selection at the **Analysis** menu is discussed below:

Clear Templates:	Removes the current template from the image. Unless the template has been saved (with or without the image), the template is removed from the system.
Load Templates:	Displays the Load Template window. This window lists all templates stored in the specified directory. The selected template is overlaid on the current image.
Save Templates As:	Enables you to save the current template to the specified directory and filename.
Create Template:	Displays the Create Template window. This window enables you to select three possible template formats: 1) Grid, 2) Lane, 3) Region.
Lane Profile:	Enables you to create profiles of lanes to view the profile of the counts along the lanes.
Find Regions:	Displays the Find Regions window. This window enables the system to automatically find and create regions on an image.
Next:	Selects the next template or template object (lane or region) in the list.
Previous:	Selects the previous template or template object in the list.

Edit Template:

Displays a window in which to edit the selected template or template object.

Delete Template:

Deletes the selected template or template object.

Report Template:

When any templates exist, reports quantitative results from analysis templates.

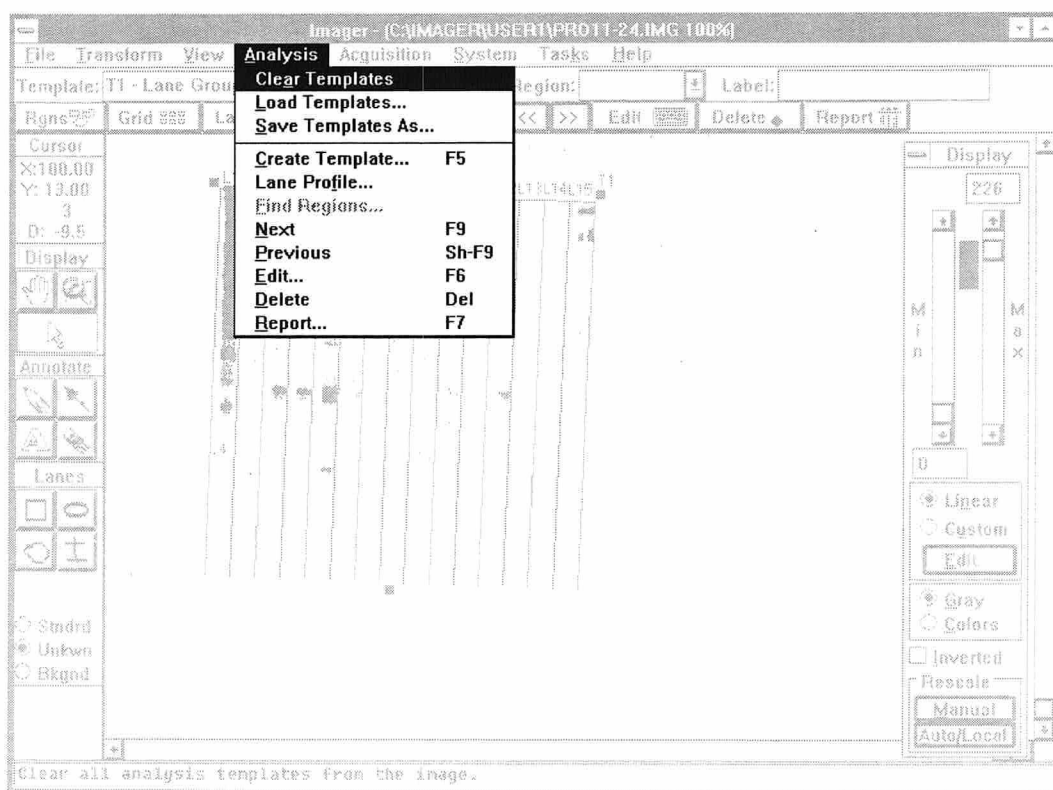


Figure 2-8. Analysis Menu.

Acquisition Menu

The **Acquisition** menu is shown in Figure 2-9 and is displayed by selecting **Acquisition** in the menu bar. The **Acquisition** menu contains commands that initiate and monitor image acquisition.

Each selection at the **Acquisition** menu is discussed below:

- | | |
|--------------------------|---|
| Edit: | Enables you to create a new acquisition protocol or edit an existing one. |
| Edit Time Series: | Allows you to enable Time Series Acquisitions and edit Time Series parameters if required. |
| Start: | Enables you to start the acquisition. |
| Stop: | Stops the acquisition. |
| Continue: | Enables you to continue an acquisition that has been stopped, either manually or due to the protocols elapsed time or preset counts parameters. |

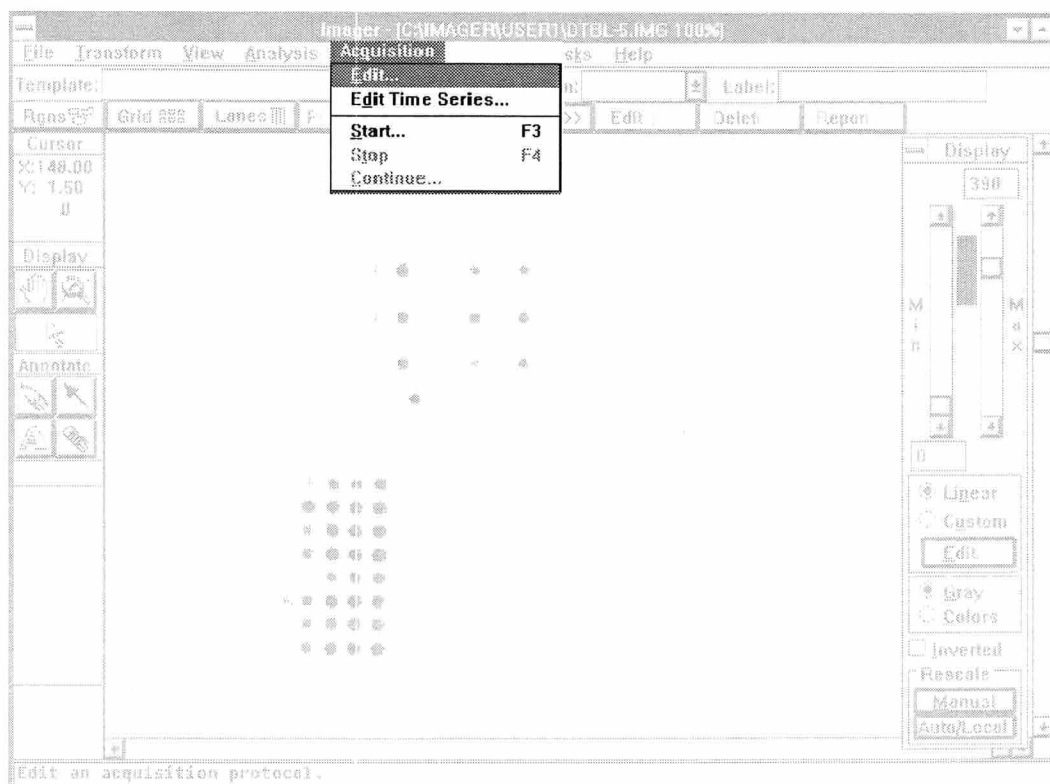


Figure 2-9. Acquisition Menu.

System Menu

The **System** menu is shown in Figure 2-10 and is displayed by selecting **System** at the menu bar.

Each selection at the **System** menu is discussed below:

Diagnostics:

TSE function only.

Calibration:

Enables you to calibrate the instrument automatically. The calibration function provides a means to automatically adjust the detector electronics to achieve optimum counting performance.

About:

Displays the current version number of the InstantImager software.

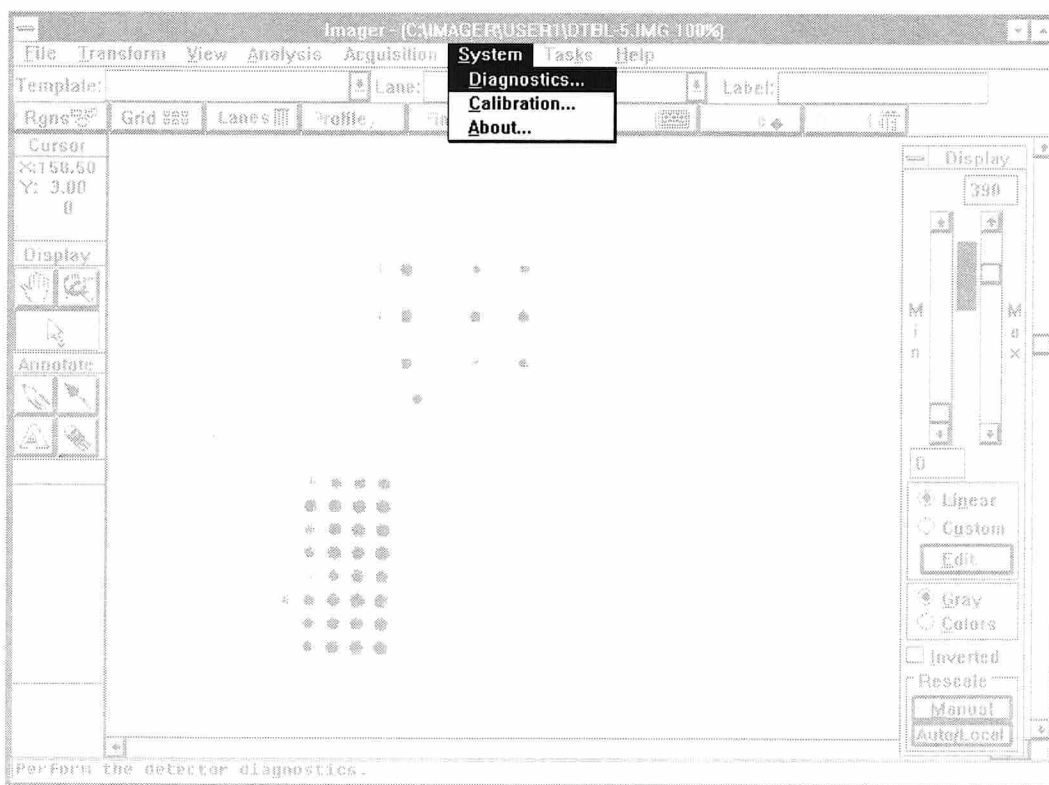


Figure 2-10. System Menu.

Tasks Menu

The **Tasks** menu (Figure 2–11) is displayed by selecting **Tasks** in the menu bar. The **Tasks** menu enables you to access the Task List. The Task List enables you to switch between running applications. Other open instances of the InstantImager will be listed.

Switch To:

Displays the Task List. The Task List enables you to switch between any running applications; whether they are running in windows or are minimized.

See the *Microsoft Windows User Guide* for more information about the Task List.



Note: You can also switch between tasks by holding down the **<Alt>** key and pressing the Tab key until the desired application is displayed.

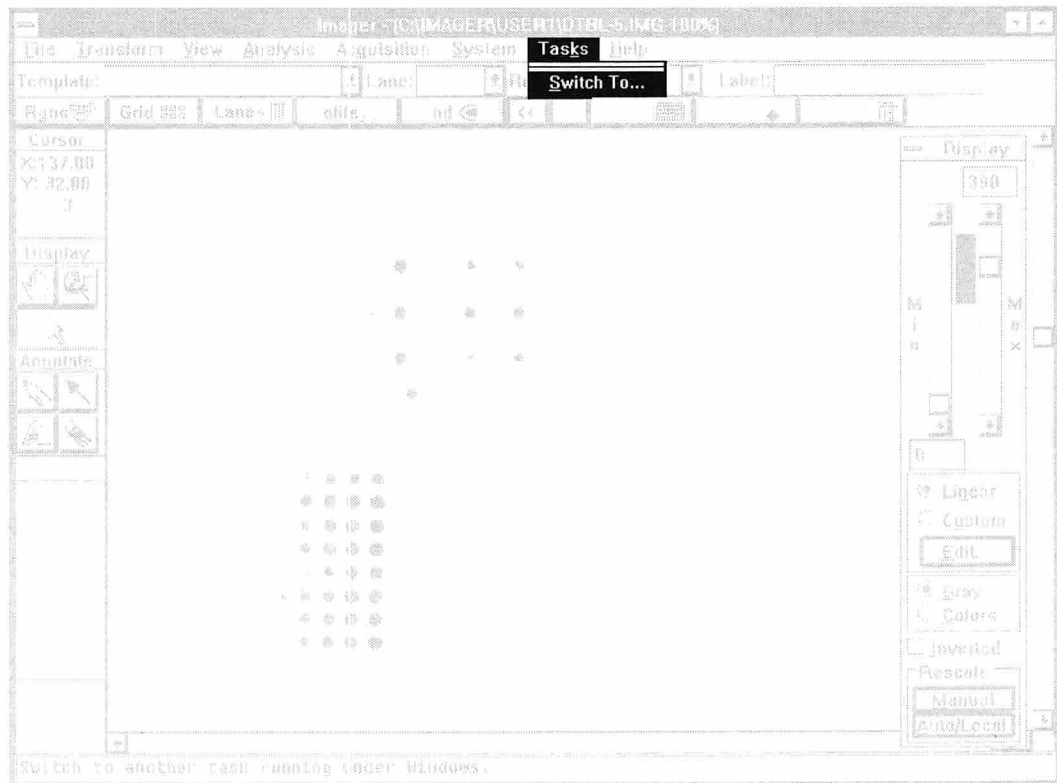


Figure 2–11. Tasks Menu.